



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,684	01/18/2002	Tatsuo Kanetake	16869B-036800US	3754
20350	7590	09/06/2006	EXAMINER DUONG, FRANK	
TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834			ART UNIT 2616	PAPER NUMBER

DATE MAILED: 09/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

1. This Office Action is a response to communications dated 04/05/06. Claims 1-19, 21-43 are pending in the application.

Drawings

2. The substituted drawings were received on 04/05/03. Fig. 4 of the substituted drawings is objected because it fails to label the identifiers of 30, 32, 32a, 32b, 34, 34a, 34b, 36 as described on page 8, paragraph [39] and thereafter.

Claim Objections

3. Claims 3, 8, 22, 24, 31 and 42 are objected to because of the following informalities:

As per claim 3, line 2, the term "is capable of being" should be changed to --is--.

As per claim 8, line 2, the term "is capable of being" should be changed to --is--.

As per claim 22, lines 16-17, the term "is capable of" should be changed to --is--.

As per claim 24, line 2, the term "is capable of being" should be changed to --is--.

As per claim 31, last line, it appears there is a typo. The term "hysical" should be changed to --physical--.

As per claim 42, line 15, the term "is capable of being" should be changed to --is--.

Examiner's note to the Applicant is that a typical reason for doing so (*change the above term*) is that such term or claim language that suggests or makes optional but

does not require steps to be performed, or by claim language that does not limit a claim to a particular structure. See MPEP § 2111.049 [R.3].

Appropriate correction is required.

Double Patenting

4. Claims 41 and 43 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 7 and 35 as asserted in the Remarks/Arguments of the outstanding response filed 04/05/06, page 18 pertaining the adding of new claims 41-43. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

In a response to this Office Action the Applicant should cancel dependent claims 7 and 35 resulting the independent claims 41 and 43 per amendment dated 04/05/06 to overcome the above objection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-6, 22-24, and 31-34 are rejected under 35 U.S.C. 102(e) as being anticipated by So et al (USP 7,012,919) (hereinafter "So").

Regarding **claim 1**, in accordance with So reference entirety, So discloses a system for managing multiple links in a label switched network (Fig. 3), comprising:

a plurality of wide band virtual links (308); including a plurality of input virtual links (308) and a plurality of output virtual links (connections to 405), each such virtual link (connections to 407) including a plurality of physical links; a plurality of ingress nodes (302), each ingress node configured to receive packets and label the packets with associated labels; a plurality of label switching nodes (304), each label switching node configured to receive the labeled packets having respective associated labels via input virtual links and forward the received labeled packets based on their respective associated labels via output virtual links (*Fig. 3 and the accompanied description at col. 9, lines 35-62 and thereafter describes the above environment of the MPLS network having ingress label switches, core label switches, egress label switches as well as physical links*), each label switching node (*Fig. 4 depicted connection details of element 304*) further including a control component (400) configured to maintain label information relating to the associated labels (*col. 10, lines 4-19*) and a forwarding component (401) configured to perform forwarding of the received labeled packets based on the label information (*col. 10, lines 4-32 and thereafter*); a plurality of egress nodes (306), each egress node configured to receive the labeled packets forwarded from one of the plurality of label switching nodes (*col. 10, lines 54-59*); wherein label

switching nodes are identified as belonging to a label switched path (Fig. 3 depicts label switched paths (310 or 312)) and virtual links interconnect the identified label switching nodes belonging to the label switched path (*see fig. 3 for switch connection detail*); and wherein the physical links within each of the virtual links used to interconnect the identified label switching nodes are collectively regarded as a single entity (FEC) by the control component (400) with respect to the label switched path (310 or 312) (*Forwarding Equivalence Class (FEC) is discussed at col. 2, lines 21-32 and thereafter*).

Regarding **claim 2**, in addition to features recited in base claim 1 (see rationales discussed above), So further discloses wherein details with respect to which ones of the physical links within an output virtual link are to be used to forward the received packets are concealed from the control component (*col. 10, lines 44-52, it is disclosed the forwarding component 401 does the packet forwarding, not the control 400. In doing so, the details of the physical links within the output virtual links are concealed from the control 400*).

Regarding **claim 3**, in addition to features recited in base claim 1 (see rationales discussed above), So further discloses wherein at least one of the labeled packets (*micro-flow data*) is forwarded to one of the physical links within an output virtual link without changing its associated label (QoS and FEC) established in an initial signaling process (*col. 9, lines 55-62*).

Regarding **claim 4**, in addition to features recited in base claim 1 (see rationales discussed above), So further discloses wherein the associated label comprises at least

one of a single sequence of bits of fixed length and wavelength of optical carriers (*col. 2, line 21 and thereafter*).

Regarding **claim 5**, in addition to features recited in base claim 1 (see rationales discussed above), So further discloses wherein each associated label belongs to one of a plurality of classes (*col. 2, lines 20-32*); and wherein the associated labels are used by a label switching node to forward packets belonging to a corresponding class onto one of the plurality of physical links of an output virtual link (*col. 9, lines 52-63 and thereafter*).

Regarding **claim 6**, in addition to features recited in base claim 1 (see rationales discussed above), So further discloses wherein the label switched network comprises a multiple protocol label switched network (Fig. 3) and the corresponding class comprises a forwarding equivalence class (*col. 2, lines 31-33 and col. 9, line 45 and thereafter*).

Regarding **claim 22**, in accordance with So reference entirety, So shows a label switching router (304) for use in a multiple protocol label switched network (Fig. 3), comprising:

a plurality of wide band virtual links (308) including a plurality of input virtual links and a plurality of output virtual links (*Fig. 4; connections to input linecard 405 and output linecard 407*), each virtual link including a plurality of physical links (*col. 9, lines 42-43*); a control component (400) configured to maintain label information relating to labels carried by packets received via the input virtual links (*col. 10, lines 4-19*); a forwarding component (401) configured to perform forwarding of the received packets based on the label information via the input virtual links (*col. 10, lines 4-32 and thereafter*); and at

least one label forwarding table (404) for storing the label information, the at least one label forwarding table (404) having a plurality of entries, each entry having an input virtual port number, an input label, an output label and an output virtual port number (*col. 10, lines 45-47 and 64-67*) wherein the label switching router (304) is identified as part of a label switched path (310 or 312) for routing packets (*col. 9, lines 35-51*); and wherein with respect to the label switched path, the control component is capable of treating the plurality of physical links within each virtual link as a single entity (FEC) (Forwarding Equivalence Class (FEC) is discussed at *col. 2, lines 21-32 and thereafter*).

Regarding **claim 23**, in addition to features recited in base claim 22 (see rationales discussed above), So further discloses wherein the control component (400) does not specify which physical link within the output virtual link used to forward the received packets (*col. 10, lines 44-52, it is disclosed the forwarding component 401 does the packet forwarding, not the control 400*).

Regarding **claim 24**, in addition to features recited in base claim 22 (see rationales discussed above), So further discloses wherein at least one of the packets is forwarded to any one of the plurality of physical links within an output virtual link without changing its associated label that is established in an initial signaling process (*col. 10, lines 17-32*).

As per **claims 31-34**, the claims call for a method having functioning steps similar to method steps of claims 1-6. Thus, they're rejected by the same rationales discussed above.

Allowable Subject Matter

6. Claims 17-19, 21 and 42 is allowed. It is noted that should claims 41 and 43 overcome the objection discussed above in a response to this Office Action, they too would be allowed for the same rationales below.

7. Claims 7-16, 25-30 and 35-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter:

The independent claims 17, 42 and the dependent claims 7-16, 25-30 and 35-40 commonly recite a novel and unobvious limitation of a first hash function operates on an associated label of a packet to be forwarded via an input virtual link to thereby obtain a hash value representing a physical link with the output virtual link used to forward the packet, structurally and functionally interconnected with other limitation in a manner as claimed.

Response to Arguments

9. Applicant's arguments with respect to claims 1-6, 22-24, 31-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Andersson et al (US 7,023,846).

Hauck (USP 6,977,932).

Avici System, Traffic Engineering with Multiprotocol Label Switching, pages 1-28, March 2000.

Mortier et al, Switchlets and Resource-Assured MPLS Networks, Systems Research Group, pages 1-17, May 2000.

Pavlou et al, Supporting Differentiated Services in MPLS Networks, IEEE, pages 207-215, 1999.

Le Faucheur, IETF Multiprotocol Label Switching (MPLS) Architecture, IEEE, pages 6-15, 1998.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the

Art Unit: 2616

examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on 571-272-7488. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**FRANK DUONG
PRIMARY EXAMINER**

September 1, 2006